

an ash discharge valve at the bottom, through which the ashes are periodically emptied into railway wagons.

The air for conveying the ashes to the ash receiving bunker is drawn through the system by a motor-driven exhauster G, by way of pipe F, and through the dust extractor G<sub>1</sub>. The exhaust from the exhauster G is discharged through a silencer and atmospheric pipe H.

With certain coals the ash is delivered from the ash hoppers under the boilers in relatively large slabs, and it is necessary that these should be broken before being admitted into the ash pipe. For this purpose a travelling motor-driven 4-roll ash breaker is provided on rails below the ash hopper doors. This crusher is indicated at K, and the ashes are always passed through this crusher before entering the pipe. It is found in practice that no dust is created when ashing operations are in progress, as the air, which is drawn

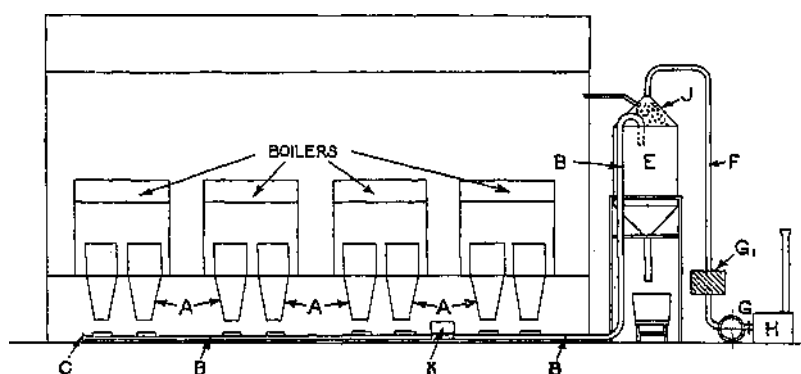


Fig. 22.—Diagrammatic Arrangement of Vacuum Ash System

through the ash crusher and through the ash pipe openings, effectively carries away all dust and fumes with the ashes.

The main supply of air, being drawn into the ash pipes through the open end c, causes a large volume of fresh air to be continually carried into the ash tunnel or basement, whereby an excellent ventilation is secured.

The travelling ash crusher already referred to is shown in fig. 23. The ash door of the ash hopper under the boiler will be seen immediately above the crusher, while on the floor behind the crusher the ash pipe will be noticed.

The vacuum ash system can be used to convey the ashes some 650 ft. from the boilers to the ash-receiving bunker. An illustration of part of a vacuum ash installation, in which the ashes are conveyed through about

350 ft. of ash pipe, is shown in fig. 24. In this instance the top of the ash-receiving bunker, seen on the right hand of the illustration, is about 45 ft. above the point at which the ashes are discharged from the boiler ash hoppers. The piping shown is 10 in. internal diameter, and the average vacuum in the receiver when ashing is in progress is from 4 to 5 in. of mercury. The exhaustor is located in the small house immediately below the ash receiver, and the round object in front of the exhaustor house is the silencer. In